poster ABSTRACT

TITLE
ANALYSIS AND PRESENTATION OF ENVIRONMENTAL EXPOSURE METRICS AT DIFFERENT GEOGRAPHIC SCALES

TRACK
Technology

OBJECTIVES
The NJDEP is developing methods to analyze and present environmental exposure data at different geographic scales. Air dispersion modeling and GIS analysis can be used to estimate environmental exposure and present data at different levels of detail.

SUMMARY

The content tracked by the Environmental Public Health Tracking Network should be aggregated and presented at different levels of detail to meet the needs of different stakeholders using the network. Also, there is a need to track environmental exposures at different levels of details. For example, ozone is generally a regional exposure, but air toxics are often a local exposure. One way to meet these needs is to use GIS to analyze and present data at different geographic scales. The NJDEP has developed statewide air toxics exposure measures using a combination of air dispersion modeling and GIS techniques enabling the data to be presented at different scales. Estimates of ambient air concentrations were developed on a 100 meter grid scale. Using GIS techniques, these estimates can be aggregated to other geographic scales including administrative boundaries such census tracts or census blocks, or other larger grid sizes. The NJDEP and NJDHSS are currently using data at a census tract level to complete linkage demonstration projects.

The presentation will summarize how the NJDEP developed emission inventory data and conducted air dispersion modeling to develop estimates of ambient air concentrations. The presentation will describe how GIS techniques were used, including spatial joining and zonal statistics using spatial analyst, to develop estimates of exposure at different geographic scales. Overlays with census data and summaries of population exposure will be presented. Results will be compared and implications and opportunities for network content discussed.

AUTHOR(S):
Steve Anderson, M.S.
New Jersey Dept. of Environmental Protection

Linda Bonanno, New Jersey Dept. of Environmental Protection
Yiling Zhang, New Jersey Dept. of Environmental Protection
Jerry Fagliano, New Jersey Dept. of Health and Senior Services
Barbara Goun, New Jersey Dept. of Health and Senior Services
Richard Opiekun, New Jersey Dept. of Health and Senior Services